Claims.

1) Hybrid bacterial toxin subunit comprising an A1-part of Shiga-toxin or Shiga-like toxin fused to an A2-part of Escherichia coli heat-labile enterotoxin.

2) Hybrid bacterial toxin subunit according to claim 1, characterized in that the A1-part is an A1-part of Stx2e

3) Hybrid bipartite bacterial toxin comprising five B-subunits of Escherichia coli heat-labile enterotoxin and the hybrid bacterial toxin subunit according to claim 1 or 2.

4) Nucleic acid molecule comprising a nucleotide sequence encoding a hybrid bacterial toxin subunit according to claim 1 or 2.

5) DNA fragment comprising a nucleic acid molecule according to claim 4.

6) Recombinant DNA molecule comprising a nucleic acid molecule according to claim 4 or a DNA fragment according to claim 5, under the control of a functionally linked promoter.

7) Live recombinant carrier comprising a nucleic acid molecule according to claim 4, a DNA fragment according to claim 5 or a recombinant DNA molecule according to claim 6.

8) Host cell comprising a nucleic acid molecule according to claim 4, a DNA fragment according to claim 5, a recombinant DNA molecule according to claim 6 or a live recombinant carrier according to claim 7.

9) Hybrid bacterial toxin subunit according to claim 1 or 2, a hybrid bipartite bacterial toxin according to claim 3, a nucleic aid molecule according to claim 4, a DNA fragment according to claim 5, a recombinant DNA molecule according to claim 6, a Live recombinant carrier according to claim 7 or a host

cell according to claim 8 for use in a vaccine.

10) Vaccine comprising a hybrid bacterial toxin subunit according to claim 1 or 2 or a hybrid bipartite bacterial toxin according to claim 3, and a pharmaceutically acceptable carrier.

11) Vaccine comprising a nucleic acid molecule according to claim 4, a DNA fragment according to claim 5, or a recombinant DNA molecule according to claim 6 and a pharmaceutically acceptable carrier.

12) Vaccine comprising a live recombinant carrier according to claim 7 or a host cell according to claim 8 and a pharmaceutically acceptable carrier.

13) Vaccine comprising antibodies against a hybrid bacterial toxin subunit according to claim 1 or 2 or a hybrid bipartite bacterial toxin according to claim 3, and a pharmaceutically acceptable carrier.

14) Vaccine according to any of claims 10-13, characterized in that said vaccine comprises an additional antigen derived from a virus or micro-organism pathogenic to humans or animals, an antibody against said antigen or genetic information encoding said antigen.

15) Vaccine according to claim 14, characterized in that said virus or micro-organism is selected from the group of Pseudorabies virus, Porcine influenza virus, Porcine parvo virus, Transmissible gastro-enteritis virus, Rotavirus, *Brachyspira hyodysenteriae*, *Escherichia coli*, *Erysipelothrix rhusiopathiae*, *Bordetella bronchiseptica*, *Brachyspira hyodysenteriae*, *Shigella sp.*, *Salmonella choleraesuis*, *Salmonella typhimurium*, *Salmonella enteritidis*, *Haemophilus parasuis*, *Pasteurella multocida*, *Streptococcus suis*, *Mycoplasma hyopneumoniae*, *Actinobacillus pleuropneumoniae*, *Staphylococcus hyicus* and *Clostridium perfringens*.

16) Use of a hybrid bacterial toxin subunit according to claim 1 or 2, a hybrid bipartite bacterial toxin according to claim 3, a nucleic acid molecule

according to claim 4, a DNA fragment according to claim 5, a recombinant DNA molecule according to claim 6, a live recombinant carrier according to claim 7, or a host cell according to claim 8 for the manufacture of a vaccine for combating *Shigella* or *Escherichia coli* infection.

17) Method for the preparation of a vaccine according to claims 10-15, said method comprising the admixing of a hybrid bacterial toxin subunit according to claim 1 or 2, a hybrid bipartite bacterial toxin according to claim 3, a nucleic acid molecule according to claim 4, a DNA fragment according to claim 5, a recombinant DNA molecule according to claim 6, a live recombinant carrier according to claim 7, a host cell according to claim 8, or antibodies against a toxin according to claim 1-3, and a pharmaceutically acceptable carrier.